

WHAT IS CLAIMED IS:

1. A vending machine, comprising:
 - a housing having a discharge opening therein;
 - a storage area within said housing, said storage area having an inclined surface upon which a plurality of articles may be stacked, said storage area in dispensing communication with said discharge opening;
 - a gate disposed adjacent said storage area, said gate movable bi-directionally with respect to said storage area;
 - a bi-directional drive device drivingly coupled to said gate; whereby when said drive device is initially operable to move said gate in a first direction an article may pass said gate from said storage area toward said discharge opening, and when said drive device is subsequently operable to move said gate in a second direction opposite said first direction additional articles may not pass said gate; and
 - a drive device reverse actuation switch associated with said gate, said switch responsive to an article passing said gate; whereby when said switch is actuated by a passing article, said drive device is caused to move said gate in said second direction.
2. The vending machine of Claim 1, wherein said gate is movable substantially vertically with respect to said storage area, and said drive device is initially operable to lower said gate and subsequently operable to raise said gate.
3. The vending machine of Claim 1, further comprising a user interface connected to said drive device, said user interface operable to initiate operation of said drive device to move said gate in said first direction.
4. The vending machine of Claim 1, wherein said storage area is a bin including said inclined bottom surface from which a pair of side walls and a rear wall upwardly extend, said gate disposed adjacent said side walls and opposite said rear wall.
5. The vending machine of Claim 1, wherein said gate includes an upper surface over which articles may pass, said switch projecting from said upper surface whereby said switch is contacted by articles passing over said upper surface.

6. The vending machine of Claim 1, wherein said gate includes at least one spring arm extending at least partially within said storage area, said spring arm positioned to contact and releasably retain an uppermost article within said storage area.

7. The vending machine of Claim 1, wherein said drive device comprises an electric motor operable in a forward direction to move said gate in said first direction and operable in a reverse direction to move said gate in said second direction, and said switch comprises a contact switch actuator and control module.

8. The vending machine of Claim 2, wherein said housing further comprises:
a display area containing a single article therein;
a limit switch operable by said gate upon a lowermost extent of travel of said gate to release said single article from said display area toward said discharge opening.

9. A vending machine, comprising:
a housing having a wall with a discharge opening therein;
a storage area within said housing, said storage area having a bottom surface with a stack of articles thereon, said bottom surface inclined in an upward direction from said wall;

a gate disposed adjacent said storage area and having a discharge portion dimensioned for passage of a said article therethrough, said gate movable downwardly and upwardly with respect to said storage area;

a motor drivingly coupled to said gate, said motor initially operable in a forward direction to move said gate downwardly to align said discharge portion with an uppermost article in said stack, said motor subsequently operable in a reverse direction to move said gate upwardly such that said discharge portion is not aligned with any remaining articles in said stack; and

a switch associated with said discharge portion of said gate, said switch responsive to an article passing said discharge portion to initiate operation of said motor in said reverse direction;

whereby when said discharge portion is aligned with said uppermost article in said stack, said uppermost article may pass through said discharge portion toward said discharge opening and actuate said switch, and when said discharge portion is not aligned

with any remaining articles in said stack, said remaining articles are prevented from passing said discharge portion.

10. The vending machine of Claim 9, further comprising a user interface connected to said motor, said user interface operable to initiate operation of said motor in said forward direction.

11. The vending machine of Claim 9, wherein said gate includes at least one spring arm extending at least partially within said storage area, said spring arm contacting and releasably retaining an uppermost article within said stack.

12. The vending machine of Claim 9, wherein said discharge portion of said gate includes an upper surface over which articles may pass, said switch projecting from said upper surface whereby said switch is contacted by articles passing over said upper surface.

13. The vending machine of Claim 9, wherein said housing further comprises:
a display area containing a single said article therein;
a limit switch operable by said gate upon a lowermost extent of travel of said gate corresponding to an absence of articles within said storage area to release said single article from said display area toward said discharge opening.

14. A vending machine, comprising:
a housing having a wall with a discharge opening therein;
a storage area within said housing, said storage area having a bottom surface upon which a plurality of articles may be stacked, said bottom surface inclined upwardly with respect to said discharge opening;
a gate disposed adjacent said storage area, said gate movable vertically with respect to said storage area;
a drive device coupled to said gate and operable to lower said gate such that an article may pass said gate toward said discharge opening, and further operable to raise said gate such that articles are prevented from passing said gate;
user-responsive means for initially causing said drive device to lower said gate sufficiently to allow an article to pass said gate toward said discharge opening; and

article-responsive means associated with said gate for subsequently causing said drive device to raise said gate sufficiently to prevent further articles from passing said gate.

15. The vending machine of Claim 14, wherein said housing further comprises:
a display area containing a single article therein;
release means operable by said gate upon a lowermost extent of travel of said gate for releasing said single article from said display area toward said discharge opening.

16. The vending machine of Claim 14, wherein said gate includes an upper surface over which articles may pass, and said article-responsive means comprises a switch projecting from said upper surface whereby said switch is contacted by articles passing over said upper surface.

17. The vending machine of Claim 14, wherein said user-responsive means comprises a coin acceptor and a controller connected to said drive device.

18. The vending machine of Claim 14, wherein said gate includes means for contacting and releasably retaining an uppermost article within said storage area.